



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Total Maximum Daily Load Information Sheet

Coonville Creek

Water Body ID: 2177

Water Body Segment at a Glance:

County: St. Francois
Nearby City: Bonne Terre
Length: 1.3 miles
Pollutants: Lead dissolved in water
Source: Unknown



Statewide Map Showing Location of Watershed

Schedule for TMDL development:

TMDL development schedules are subject to change.

The most current schedule for TMDL development is available on the department's website at dnr.mo.gov/env/wpp/tmdl/wpc-tmdl-progress.htm

Description of the Problem

A water body is considered impaired when it fails to meet applicable water quality standards. Water quality standards consist of designated uses, water quality criteria, an antidegradation policy and implementation procedures. Coonville Creek is impaired due to exceedances of the water quality criteria for the protection of aquatic life.

Designated uses of Coonville Creek*

- Warm Water Habitat (WWH)
- Whole Body Contact Recreation Category B (WBC-B)
- Secondary Contact Recreation (SCR)
- Human Health Protection (HHP)
- Irrigation (IRR)
- Livestock and Wildlife Protection (LWP)

*In addition to these specific uses, all waters of the state are protected by the general water quality criteria that are specified in the state's Water Quality Standards at 10 CSR 20-7.031(4).

Designated use that are impaired

- Warm Water Habitat (WWH)

Criteria that apply

Chronic and acute criteria for dissolved lead are found in Table A of Missouri's water quality standards at 10 CSR 20.7.031. These criteria are hardness dependent and are calculated using the following equations.

- Acute: $e(1.273 \cdot \ln(\text{Hardness}) - 1.460448) * (1.46203 - (\ln(\text{Hardness}) * 0.145712))$
- Chronic: $e(1.273 \cdot \ln(\text{Hardness}) - 4.704797) * (1.46203 - (\ln(\text{Hardness}) * 0.145712))$

In addition to the specific numeric criteria found in Table A, the following narrative criteria in Missouri's water quality standards also pertain to this lead impairment.

- Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life [10 CSR 20-7.031(3)(D)].
- Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(3)(G)].

Background information and water quality data

Coonville Creek is a rural stream located approximately 2 miles north of Bonne Terre and is a tributary of the Big River. The chronic lead criterion for the protection of aquatic life is hardness dependent. The estimated 25th percentile hardness value in Coonville Creek is 190 milligrams per liter, giving a chronic lead criterion value of 5.02 µg/L. Waters are judged to be impaired by toxics such as lead if there is more than one exceedance of the criterion in the last three years of available data that was collected during stable flow conditions. The most recent available data was collected in 2012. All three samples collected that year exceeded the calculated criterion. Additional exceedances were observed in data collected in 1995 and 1996. Historic mining activities in the area, including a suspected smelter site, are likely playing a role in the lead impairment.

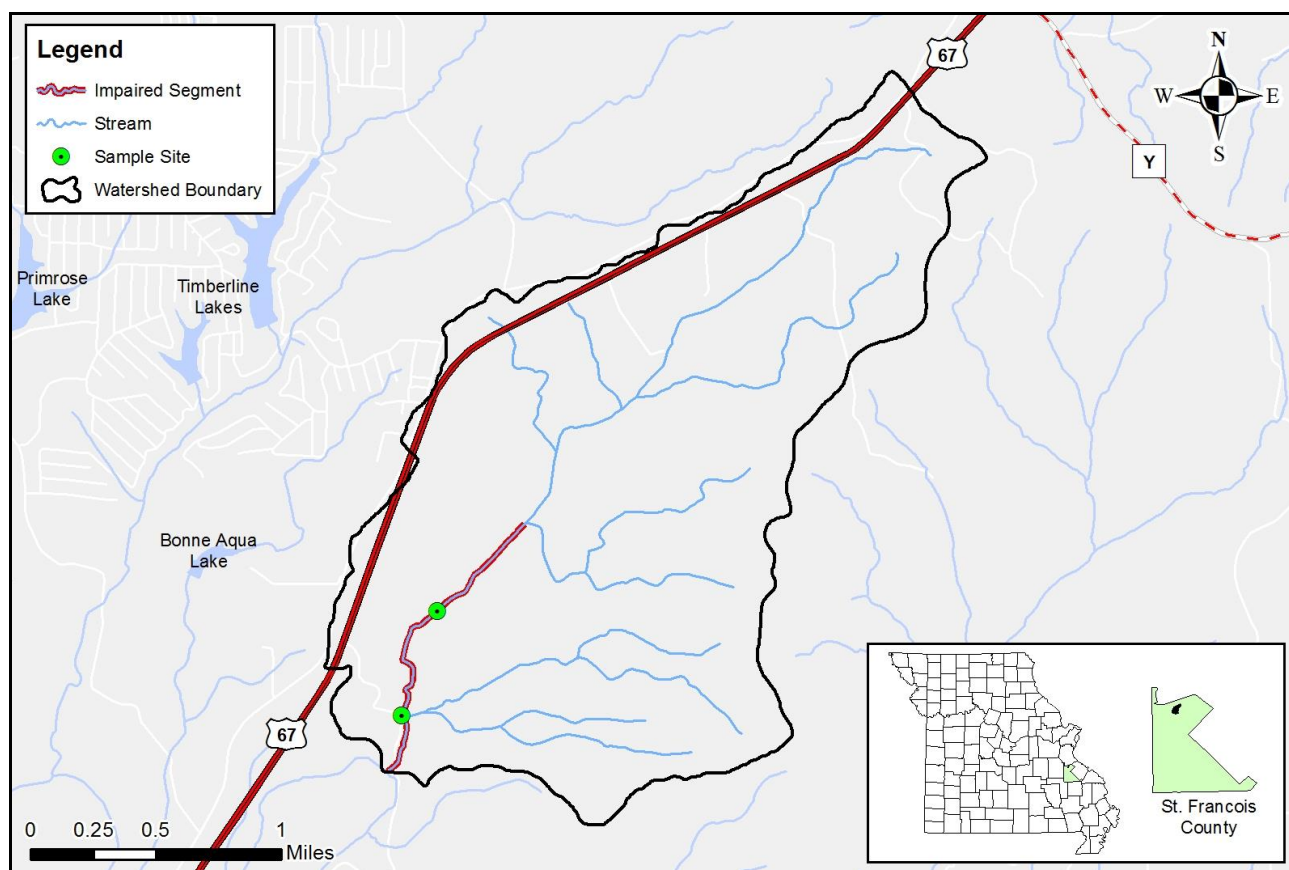
Recent Dissolved Lead Data

<i>Sampling Organization</i>	<i>Sampling Location</i>	<i>Month</i>	<i>Day</i>	<i>Year</i>	<i>Flow</i>	<i>Hardness</i>	<i>Dissolved Lead</i>
MoDNR	0.5 mile above Park Road	6	19	2012	0.7	274	9.62
MoDNR	Near stream mouth	4	4	2012	0.45	294	5.07
MoDNR	Near stream mouth	6	19	2012	0.8	278	5.35

TMDL for Coonville Creek

The Coonville Creek TMDL will calculate the maximum amount of each listed pollutant that the stream can receive and still meet water quality standards. The TMDL will also identify all potential or suspected pollutant sources in the watershed and distribute the allowable pollutant loads among those various sources. When developed, the Coonville Creek TMDL will use the most current and available data. For this reason, the final TMDL may present information that differs from that contained in this information sheet.

Map Showing the Coonville Creek Watershed



For more information call or write:

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